

Missouri Department of Natural Resources  
**Total Maximum Daily Load Information Sheet**

## Lost Creek

### Water Body Segment at a Glance:

**County:** Newton  
**Nearby Cities:** Seneca  
**Length of impaired segment:** 8.5 miles  
**Pollutant:** Bacteria  
**Source:** Rural Nonpoint Source  
**Water Body ID:** 3278



State Map Showing Location of Watershed

**Scheduled for TMDL development: 2013**

### Description of the Problem

#### Beneficial uses of Lost Creek

- Livestock and Wildlife Watering
- Protection of Aquatic Life: Cool Water Fishery
- Protection of Human Health (Fish Consumption)
- Whole Body Contact Recreation – Category A
- Secondary Contact Recreation

#### Use that is impaired

- Whole Body Contact Recreation – Category A

#### Standards that apply

- Missouri's Water Quality Standards at 10 CSR 20-7.031(4)(C) state that the *E. coli* bacteria count shall not exceed 126 colonies per 100 milliliters of water (126 col/100 mL) for Category A and 206 col/100 mL for Category B waters. This count is the geometric mean during the recreational season (April 1- October 31) in waters designated for whole body contact recreation.

#### Background information and water quality data

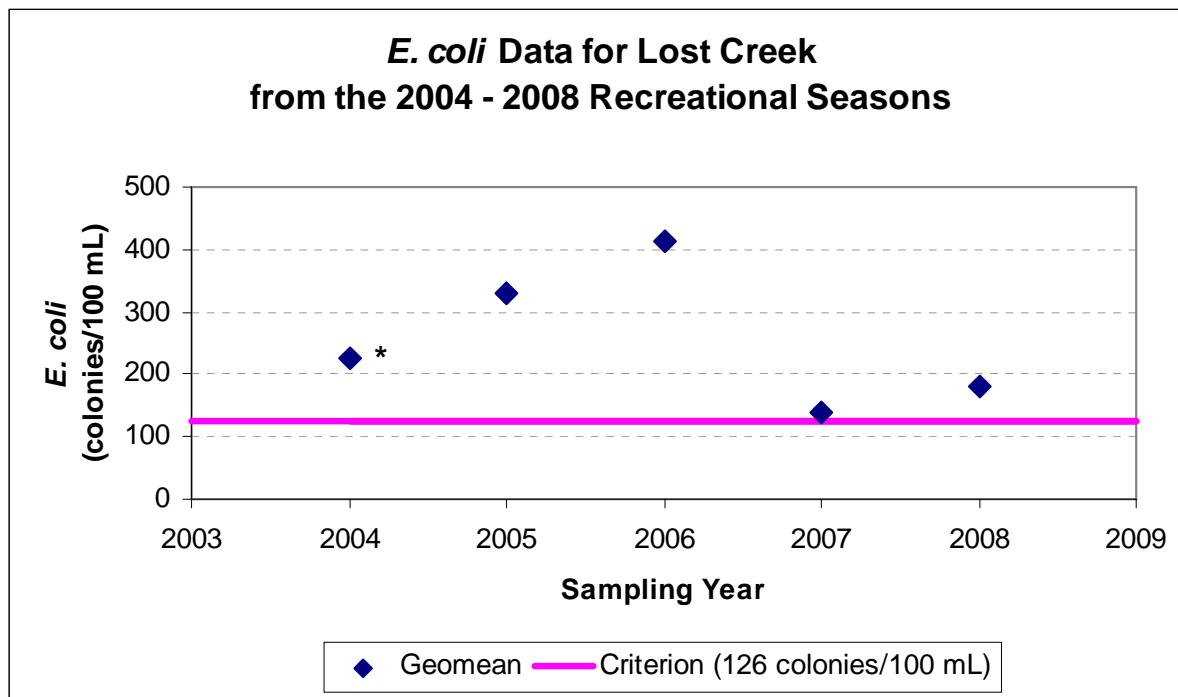
Lost Creek is a rural stream in southwest Missouri. It flows southwest and crosses over into Kansas at Seneca, Mo. It is designated as Category A for the whole body contact recreation use, which means it has swimming areas which are open to and fully accessible by the public.

Excessive amounts of fecal bacteria in surface water used for recreation are an indication of an increased risk of pathogen-induced illness to humans. Infections due to pathogen-contaminated

waters include gastrointestinal, respiratory, eye, ear, nose, throat and skin diseases. *E. coli*, are bacteria found in the intestines of warm blooded animals and are used as indicators of the risk of waterborne disease from pathogenic (disease causing) bacteria or viruses. Most *E. coli* strains are harmless, but some can cause serious illness in humans and are occasionally responsible for product recalls. The harmless strains are part of the normal flora of the intestines, and can benefit their hosts by preventing the establishment of pathogenic bacteria within the intestine<sup>1,2</sup>. Missouri's bacteria criteria are based on specific levels of risk of acute gastrointestinal illness. The levels of risk correlating to these criteria are no more than eight illnesses per 1,000 swimmers in fresh water.

The bacteria impairment in Lost Creek is based on data gathered by the Newton County Health Department from 2006-07 and by the Eastern Shawnee Tribal Organization (Oklahoma) in 2004, 2005 and 2007-2008. The listing methodology states that, to be considered not impaired, a water body must meet the water quality criterion in each of the last three years of available data and that the geometric mean must consist of at least five data points within the recreational season. The geometric mean of the recreation season data exceeded the criterion for *E. coli* of 126 col/100 mL for Category A waters each year from 2005-2008.

People can protect themselves from waterborne illness by avoiding contact with contaminated water. However, when swimming anywhere, it is wise to take common sense precautions. These include washing hands before eating, showering after swimming and avoiding exposure to questionable water if you have open cuts or wounds.

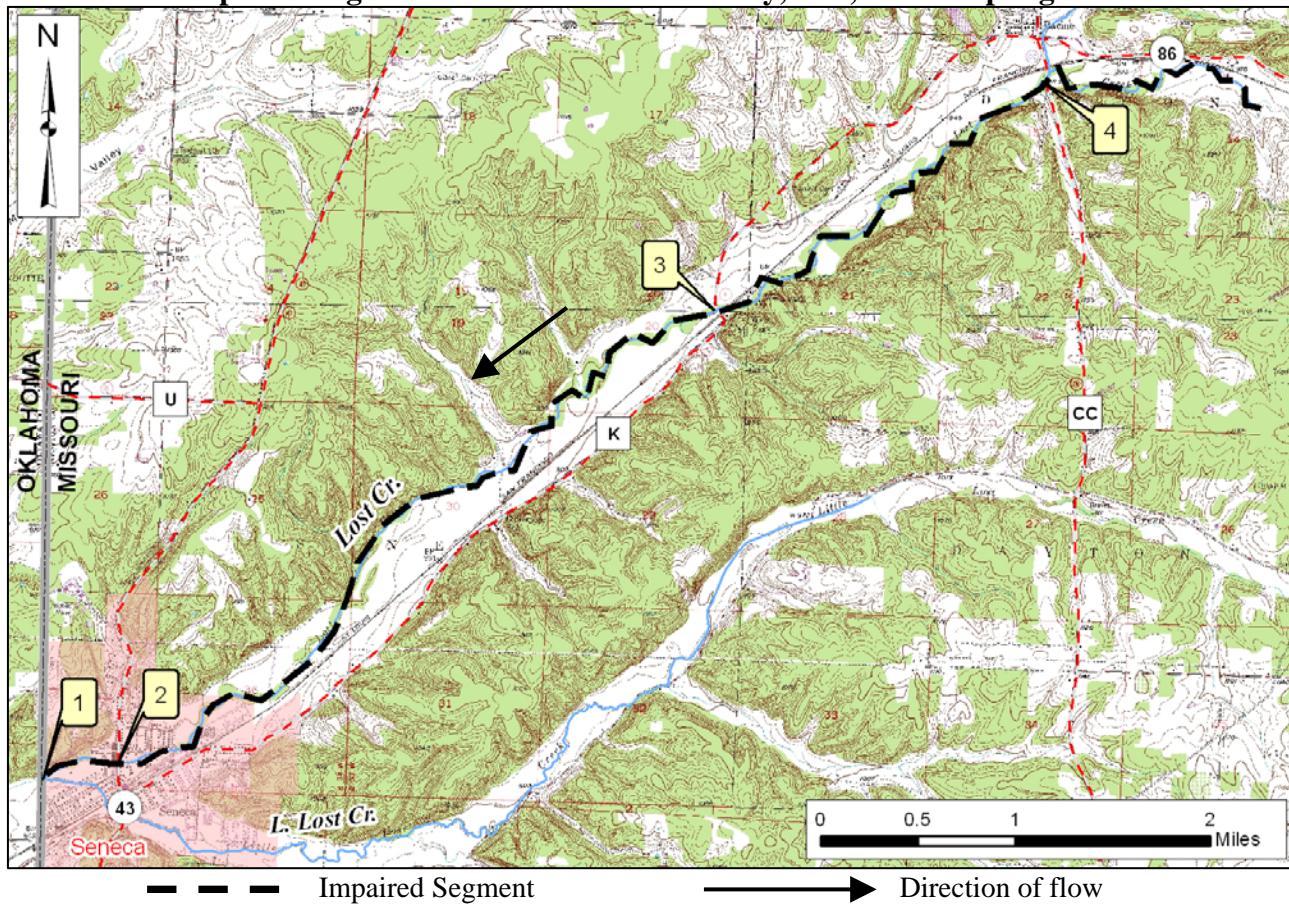


\* Geomean for 2004 was calculated using fewer than five (5) samples.

<sup>1</sup> Hudault S, Guignot J, Servin AL (July 2001). "[Escherichia coli](#) strains colonising the gastrointestinal tract protect germfree mice against *Salmonella typhimurium* infection". *Gut* **49** (1): 47-55

<sup>2</sup> Reid G, Howard J, Gan BS (September 2001). "Can bacterial interference prevent infection?". *Trends Microbiol.* **9** (9): 424-8.

## Map Showing Lost Creek in Newton County, Mo., and Sampling Sites



### Sample Sites

- 1 – Lost Creek at state line
- 2 – Lost Creek at State Highway 43
- 3 – Lost Creek at State Highway K
- 4 – Lost Creek near Racine at State Highway CC

### For more information call or write:

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Water Protection Program  
P.O. Box 176, Jefferson City, MO 65102-0176  
1-800-361-4827 or 573-751-1300 office  
573-522-9920 fax  
Program Home Page: [www.dnr.mo.gov/env/wpp/index.html](http://www.dnr.mo.gov/env/wpp/index.html)